

## **CLAIMS**

What is claimed is:

1. A production method of multi-layer information record carriers comprising:

Provides a first substrate, and form a signal duplication layer on the said first

5 substrate that contains signals;

Coats the said signal duplication layer with a high molecular resin solution and

turn the said high molecular resin solution into a signal layer by subjecting it to curing;

Provides a second substrate, and affix the second substrate to the said signal layer;

Coats the surface of the cured signal layer with a second high molecular resin

10 solution so as to glue the said signal layer and the said second substrate together; and

Subjects the said high molecular resin solution to curing, and separate the said  
signal layer from the said signal duplication layer of the said second substrate.

2. The production method of multi-layer information record carriers of claim 1, wherein the  
first substrate and the second substrate may be made from a material chosen from one of  
15 the following: Polycarbonate (PC), PMMA, glass or nickel.

3. The production method of multi-layer information record carriers of claim 1, wherein the  
said signal duplication layer may be made from one of the following: gold, silver,  
aluminum, chromium, platinum, nickel, silicon and their alloys.

4. The production method of multi-layer information record carriers of claim 3, wherein the  
20 said signal duplication layer is formed by plating and its thickness is controlled.

5. The production method of multi-layer information record carriers of claim 1, wherein the said high molecular resin solution and the said second high molecular resin solution may be made from a material chosen from one of the following: Epoxy, Acrylics or Polyester.
- 5 6. The production method of multi-layer information record carriers of claim 1, wherein the said high molecular resin solution and the said second high molecular resin solution are subjected to curing by the illumination of ultra violet light.
- 10 7. The production method of multi-layer information record carriers of claim 1, wherein the thickness of the said high molecular resin solution and the said second high molecular resin solution is controlled by the speed of spin coating and the concentrations of the said high molecular resin solution and the said second high molecular resin solution.
8. The production method of multi-layer information record carriers of claim 1, wherein the said second substrate is repeatedly affixed to signal layers so as to form multi-layer information record carriers.
- 15 9. The production method of multi-layer information record carriers of claim 8, wherein the signal layers of the said multi-layer information record carriers are plated with semi-reflection layers and total reflection layers in accordance with the different specifications of the said multi-layer information record carriers.
- 20 10. The production method of multi-layer information record carriers of claim 9, wherein the semi-reflection layer placed in between the signal layers of the said multi-layer information record carriers may be made from a material chosen from the following: gold, silver, aluminum, silicon and their alloys.

11. The production method of multi-layer information record carriers of claim 9, wherein the total reflection layer may be made from a material chosen from the following: metal and alloys of gold, silver, aluminum, copper, chromium and silicon.

12. A production method of multi-layer information record carriers comprising:

5           Provide a first substrate, and form a signal duplication layer on the said first substrate that contains signals;

Coat the said signal duplication layer with a high molecular resin solution and turn the said high molecular resin solution into a signal layer;

10          Provide a second substrate, and affix the said second substrate to the said signal layer;

Subject the said high molecular resin solution to curing so as to glue the said second substrate and the said signal layer together; and

Separate the said signal layer from the said signal duplication layer of the said second substrate.

15       13. The production method of multi-layer information record carriers of claim 12, wherein the said first substrate and the said second substrate may be made from a material chosen from one of the following: Polycarbonate (PC), PMMA, glass or nickel.

14. The production method of multi-layer information record carriers of claim 12, wherein the said signal duplication layer may be made from one of the following: gold, silver, aluminum, chromium, platinum, nickel, silicon and their alloys.

15. The production method of multi-layer information record carriers of claim 12, wherein  
the said signal duplication layer is formed by plating and its thickness is controlled.
16. The production method of multi-layer information record carriers of claim 12, wherein  
the said high molecular resin solution may be made from a material chosen from one of  
5 the following: Epoxy, Acrylics or Polyester.
17. The production method of multi-layer information record carriers of claim 12, wherein  
the said second high molecular resin solution are subjected to curing by the illumination  
of ultra violet light.
18. The production method of multi-layer information record carriers of claim 12, wherein  
10 the thickness of the said high molecular resin solution is controlled by the speed of spin  
coating and the concentrations of the said high molecular resin solution.
19. The production method of multi-layer information record carriers of claim 12, wherein  
the said second substrate is repeatedly affixed to signal layers so as to form multi-layer  
information record carriers.
- 15 20. The production method of multi-layer information record carriers of claim 19, wherein  
the signal layers of the said multi-layer information record carriers are plated with semi-  
reflection layers and total reflection layers in accordance with the different specifications  
of the said multi-layer information record carriers.
- 20 21. The production method of multi-layer information record carriers of claim 20, wherein  
the semi-reflection layer placed in between the signal layers of the said multi-layer  
information record carriers may be made from a material chosen from the following: gold,  
silver, aluminum, silicon and their alloys.

22. The production method of multi-layer information record carriers of claim 20, wherein  
the total reflection layer may be made from a material chosen from the following: metal  
and alloys of gold, silver, aluminum, copper, chromium and silicon.